

THE MINERAL INDUSTRY OF

RUSSIA

By Richard M. Levine

Russia extends over more than 75% of the territory of the former Soviet Union (FSU) and accordingly possesses a high percentage of the FSU's mineral resources. Russia was a major mineral producer, accounting for a large percentage of the FSU's production of a range of mineral products, including aluminum, bauxite, cobalt, coal, diamonds, mica, natural gas, nickel, oil, platinum-group metals, tin, and a host of other metals, industrial minerals, and fuels. Still, Russia was significantly import dependent on a number of raw materials, including bauxite, chromite, manganese, titanium, and zirconium ores.

The most significant regions of the country for nonferrous metal mining are the Kola Peninsula (cobalt, copper, nickel, columbium (niobium), rare earth metals, and tantalum), the North Caucasus (copper, lead, molybdenum, tungsten, and zinc), East Siberia (cobalt, copper, lead, nickel, columbium (niobium), platinum-group metals, tungsten, and zinc), the Russian Far East (gold, lead, silver, tin, tungsten, and zinc), and the Urals (bauxite, cobalt, copper, lead, nickel, and zinc) (Novikov and Yastrzhembskiy, 1999). The country's major iron-ore-mining regions are the Kursk Magnetic Anomaly in Central Russia, the Kuznetsk basin in West Siberia, the Urals, and the Kola Peninsula in the far North West. The most significant region for oil and gas extraction is West Siberia, and coal deposits are dispersed mainly in northern and eastern regions of the country.

Russia possesses one of the world's largest mineral raw material bases. According to the assessment of experts from the Russian Federation Ministry of the Economy's Department of the Economics of Metallurgy, reserves are sufficient to supply existing enterprises mining iron ore for 15 to 20 years or longer and nonferrous metals for 10 to 30 years at the 1995-2000 levels of extraction. The picture was less favorable when viewed on a regional basis because it was predicted that in the near future a significant number of existing enterprises would be without adequate reserves (Novikov and Yastrzhembskiy, 1999). These experts stated that because mining enterprises were now working under market economy conditions, production and transport costs had greatly increased. Therefore, it was necessary to reevaluate the criteria for determining reserves. According to these experts, if this reevaluation were to happen, then actual reserves would diminish by 30% to 50% for ferrous and nonferrous metal reserves (Novikov and Yastrzhembskiy, 1999).

In 1997, Russia was extracting ore at 26 iron ore deposits, 160 nonferrous metals deposits, 1 chromite deposit, and numerous industrial minerals deposits (Novikov and Yastrzhembskiy, 1999). Russia remained one of the world's leading oil producers with 70% of its reserves concentrated in large deposits and was the leading country in the world in natural gas reserves; it has maintained gas production levels since the breakup of the Soviet

Union despite a spate of economic difficulties. The country also reportedly possesses 140.2 billion metric tons of explored coal reserves, of which about 90% are located in the sparsely populated eastern part of the country (Kozlovskiy and Shchadov, 1999).

Lack of funding has caused a deterioration of capital stock at mining enterprises. At the majority of mining enterprises, there has been a sharp decrease in production indicators. As a result, during the last 7 years, more than 20 million metric tons of capacity has been decommissioned at iron-ore-mining enterprises. In the nonferrous sector in the past 7 years there has been a 9% loss in bauxite mining capacity and a 20% loss in copper mining capacity; there has been a loss in concentrate production capacity for lead of 39%, for molybdenum of 43%, for tin of 41%, for tungsten of 73%, and for zinc of 23% (Novikov and Yastrzhembskiy, 1999).

From 1995 to 1997, there was a slow growth in the price of ore concentrates while at the same time there was a sharp increase in the price of inputs for mining enterprises. As a consequence, the profitability of most enterprises sharply decreased in 1997. Additional explanations given for the unprofitability of mining enterprises included the low quality of the ore base, the sharp fall in demand for ferrous and rare metals, and new tax systems (Novikov and Yastrzhembskiy, 1999). Mineral consumption in Russia has fallen drastically since the dissolution of the Soviet Union because of the general downturn in economic activity and the sharp fall in defense industry production, which was a major consumer of a range of metals. Faced with the large downturn in domestic consumption, Russia has become a large exporter of minerals to world markets. It exported a large percentage of its production of nonferrous and precious metals and oil and gas. In cases where Russia was still exporting minerals to other FSU countries, it was, at times, incurring heavy debt from nonpayment, as was the case with natural gas shipments. Until economic activity in Russia increases significantly, Russia's mineral industries will continue to try to export a major share of their output to world markets.

The 1997 report on Russia's mineral industry is abbreviated. For more detailed coverage, please refer to the U.S. Geological Survey's 1996 Minerals Yearbook, Volume III, Mineral Industries of Europe and Central Eurasia.

References Cited

- Kozlovskiy, Ye.A., and Shchadov, M.I., 1999, Ukrepneniye mineral'no-syr'evoy bazy-Osnova stabil'nogo razvitiya Rossii: Gornyy Zhurnal (Mining Journal), no. 2, p. 3-7.
- Novikov, A.A., and Yastrzhembskiy, I.E., 1999, Sovremennoye sostoyaniye i prognoz razvitiya promyshlennosti chernykh i tsvetnykh metallov Rossii: Gornyy Zhurnal (Mining Journal), no. 2, p. 13-16.

TABLE 1
RUSSIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1993	1994	1995	1996	1997 e/
METALS					
Aluminium:					
Ore and concentrate:					
Alumina	2,500,000 r/ e/	2,254,000 r/	2,300,000 r/ e/	2,105,000 r/	2,300,000
Bauxite, 26% to 57% alumina e/	4,260,000 2/	3,000,000	3,100,000	3,300,000	3,350,000
Nepheline concentrate, 25% to 30% e/	1,390,000 r/ 2/	1,300,000 r/	1,400,000 r/	1,300,000 r/	1,100,000
Metal, smelter, primary	2,820,000	2,670,496 r/	2,724,378 r/	2,874,236 r/	2,906,020 2/
Antimony, mine output, Sb content	7,120 r/	7,000 r/	6,000 r/ e/	6,000 r/ e/	6,000
Arsenic, white e/	2,000	1,500	1,500	1,500	1,500
Beryllium, beryl, cobbled, 10% to 20% BeO e/	1,000	1,000	1,000	1,000	1,000
Bismuth, mine output, Bi content e/	60 r/	40 r/	50 r/	50 r/	50
Cadmium metal, smelter	700 e/	600	725	730	790
Chromium, chrome ore, marketable	120,800 r/	143,000 r/	151,400 r/	96,700 r/	150,000
Cobalt: e/					
Mine output, recoverable Co content	3,500	3,000	3,500	3,300 r/	3,300
Metal, refined	3,700	4,340	4,450	4,200	4,100
Copper:					
Ore, Cu content, recoverable	583,600	573,300	525,000 r/	520,000 r/ e/	505,000
Metal:					
Blister: e/					
Primary	534,000 r/	514,000 r/	525,000 r/	550,000 r/	575,000
Secondary	10,000	10,000	20,000	20,000 r/	25,000
Refined:					
Primary	486,000	452,000	504,000	513,000	550,000
Secondary	40,000	50,000	56,000	57,000	60,000
Total	1,070,000	1,026,000	1,105,000	1,140,000	1,210,000
Gold, mine output, Au content kilograms	149,500	146,600	132,170	123,000	115,000
Iron and steel:					
Iron ore, 55% to 63% Fe	76,100,000	73,300,000	75,900,000 r/	69,600,000 r/	70,800,000
Metal:					
Pig iron	40,871,000	36,116,000	39,762,000	36,061,000 r/	37,327,000
Direct-reduced iron	1,540,000	1,710,000	1,680,000	1,500,000	1,730,000
Ferroalloys: e/					
Blast furnace:					
Ferromanganese	150,000	55,000	55,000	55,000	55,000
Ferrophosphorus	25,000	20,000	20,000	20,000	20,000
Spiegeleisen	8,000	7,000	7,000	7,000	7,000
Electric furnace:					
Ferrochromium	255,900 2/	265,525 2/	290,000	135,000	247,000
Ferrochromiumsilicon	40,000	40,000	30,000	5,000	5,000
Ferronickel	47,000	59,000	77,000	75,000	40,000
Ferrosilicon	400,000	350,000	350,000	460,000	496,000 2/
Silicomanganese	--	--	700	--	--
Silicon metal	50,000	40,000	40,000	40,000	40,000
Other	50,000	40,000	40,000	40,000	40,000
Total	1,025,900	876,525	909,700	837,000	950,000
Steel:					
Crude	58,346,000	48,812,000	51,300,000	49,193,000	48,441,000 2/
Finished	42,700,000	35,900,000	39,100,000	39,000,000 r/	37,800,000 2/
Pipe	5,800,000	3,600,000	3,700,000	3,600,000 r/	3,500,000 2/
Lead:					
Mine output, recoverable Pb content	34,000	25,000	23,000	18,000	19,500
Metal, smelter: e/					
Primary	34,000 r/	25,000 r/	20,000 r/	20,000 r/	32,000
Secondary	11,000 r/	9,000 r/	10,000 r/	10,000 r/	20,000
Total	45,000 r/	34,000	30,000	30,000 r/	52,000
Magnesium metal, including secondary	30,000 e/	35,400	37,500	35,000 e/	39,500
Mercury e/	60	50	50	50	50
Molybdenum e/	10,300	7,700	8,800	8,500 r/	8,500
Nickel: e/					
Mine output, recoverable Ni content	244,000 2/	240,000	251,000	230,000	260,000
Nickel products, including ferronickel	186,600 r/	180,900	201,100 r/	190,000	230,000

See footnotes at end of table.

TABLE 1--Continued
RUSSIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1993	1994	1995	1996	1997 e/
METALS--Continued					
Platinum-group metals: e/					
Platinum	30,000 r/	22,500 r/	25,000 r/	25,000 r/	25,000
Palladium	95,000 r	70,000 r/	80,000 r/	80,000 r/	80,000
Other	4,000	3,000	3,500	3,500	3,500
Total	129,000	95,500	108,500	108,500	108,500
Silver e/	800,000 r/	800,000 r/	700,000	700,000 r/	700,000
Sulfur:					
Native	100,000	80,000	80,000	70,000	50,000
Pyrites	640,000	700,000	450,000	400,000	400,000
Byproduct, natural gas	2,680,000	2,550,000	2,970,000	3,000,000	2,950,000
Other	300,000	320,000	335,000	325,000	350,000
Total	3,720,000	3,650,000	3,835,000	3,795,000	3,750,000
Tin:					
Mine output, recoverable Sn content	13,100 r/	10,460 r/	9,000 r/ e/	8,000 r/ e/	7,500
Metal, smelter: e/					
Primary	13,400	11,500	9,500	9,000 r/	6,700
Secondary	1,000	1,000	1,000	1,000	1,000
Total	14,400	12,500	10,500	10,000 r/	7,700
Titanium sponge	10,000 e/	12,000 r/ e/	14,000	20,000	26,000
Tungsten concentrate, W content e/	8,000 r/	4,000 r/	5,400 r/	3,000 r/	3,000
Vanadium metal	12,800 r/	11,900 r/	11,000 r/	11,000 r/	11,000
Zinc:					
Mine output, recoverable Zn content	154,000	147,000	131,000	126,000	121,000
Metal, smelter: e/					
Primary	170,000 r/	110,000 r/	135,000 r/	140,000 r/	155,000
Secondary	33,000 r/	27,800 r/	31,000 r/	32,000 r/	30,000
Total	203,000	137,800	166,000	172,000	185,000
INDUSTRIAL MINERALS					
Asbestos, grades I-VI e/	1,000,000 r/	800,000 r/	800,000 r/	720,000 r/	700,000
Barite e/	70,000 r/	70,000	70,000	70,000	70,000
Cement, hydraulic	49,900,000	37,200,000	36,500,000 r/	27,800,000	26,600,000 2/
Clays: Kaolin including china clay	NA	NA	NA	NA	NA
Corundum, natural	NA	NA	NA	NA	NA
Diamond: e/					
Gem carats	8,000,000	8,500,000	9,000,000	9,250,000	9,550,000
Industrial do.	8,000,000	8,500,000	9,000,000	9,250,000	9,550,000
Synthetic do.	80,000,000	80,000,000	80,000,000	80,000,000	80,000,000
Total do.	96,000,000 r/	97,000,000 r/	98,000,000 r/	98,500,000 r/	99,100,000
Diatomite	70,000	50,000	50,000	50,000	50,000
Feldspar e/	70,000	55,000 r/	55,000 r/	45,000 r/	45,000
Fluorspar, concentrate 55% to 96.4% CaF ₂	236,300 r/	250,000	250,000 e/	250,000 e/	250,000
Graphite e/	10,000	8,000	8,000	6,000 r/	6,000
Gypsum e/	1,500,000 r/	1,200,000 r/	1,200,000 r/	850,000 r/	800,000
Lime, dead-burned	NA	NA	NA	NA	NA
Lithium minerals, not further specified e/	3,000	2,000	2,000	2,000	2,000
Magnesite, marketable product e/	800,000	700,000	700,000	600,000 r/	600,000
Mica e/	129,000 2/	100,000	100,000	100,000	100,000
Nitrogen, N content of ammonia	8,138,000 r/	7,300,000 r/	7,900,000 r/	7,900,000 r/	7,150,000 2/
Phosphate rock: e/					
Apatite concentrate, 37% to 39.6% P ₂ O ₅	9,000,000	7,700,000 r/	8,500,000	8,200,000 r/	7,200,000
Sedimentary rock, 19% to 30% P ₂ O ₅	400,000	300,000	300,000	300,000	300,000
Total	9,400,000	8,000,000 r/	8,800,000	8,500,000 r/	7,500,000
Potash, marketable, K ₂ O equivalent	2,628,000	2,498,000	2,800,000	2,618,000 r/	3,400,000
Pyrite, gross weight	NA	NA	NA	NA	NA
Salt, all types e/	2,200,000	2,000,000	2,000,000 r/	1,600,000 r/	1,400,000
Sodium compounds, n.e.s., carbonate	1,992,000	1,585,000	1,823,000	1,500,000 r/	1,700,000 2/
Sulfur:					
Native	100,000	80,000	80,000	70,000	50,000
Pyrites	640,000 r/	700,000	450,000 r/	400,000 r/	400,000
Byproduct, natural gas	2,680,000 r/	2,550,000 r/	2,970,000 r/	3,000,000 r/	2,950,000
Other	300,000	320,000	335,000 r/	325,000	350,000

See footnotes at end of table.

TABLE 1--Continued
 RUSSIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1993	1994	1995	1996	1997 e/
INDUSTRIAL MINERALS--Continued					
Sulfur--Continued:					
Total	3,720,000 r/	3,650,000 r/	3,835,000 r/	3,795,000 r/	3,750,000
Sulfuric acid	8,243,000	6,334,000	6,946,000	5,650,000 r/ e/	6,100,000 2/
Talc e/	131,688 2/	100,000	100,000	100,000	100,000
Vermiculite e/	50,000	40,000	40,000	30,000 r/	25,000
MINERAL FUELS AND RELATED MATERIALS					
Coal	306,000,000	272,000,000	262,000,000 r/	255,000,000	244,000,000 2/
Coke, 6% moisture content	27,600,000	25,400,000	27,600,000	25,000,000 r/ e/	25,600,000 2/
Gas, natural, marketed	618,000	607,000	595,000	601,000 r/	571,000 2/
Oil shale	3,300,000	3,300,000	2,300,000 r/	2,000,000 e/	2,000,000
Peat, fuel use	2,500,000	2,900,000	2,900,000 r/	2,900,000 r/ e/	2,900,000
Petroleum:					
Crude:					
Gravimetric units	354,000,000	318,000,000	307,000,000	301,000,000	297,000,000 2/
Converted, volumetric units e/ thousand 42-gallon barrels	2,600,000	2,300,000	2,250,000	2,200,000 r/ e/	2,180,000
Refinery products 3/	223,000,000	186,000,000	183,000,000	176,000,000	178,000,000 2/
Uranium concentrate, U content	2,399 r/	2,968 r/	2,250 r/	2,000 r/	2,000 2/

e/ Estimated. r/ Revised. NA Not available.

1/ Includes data available through April 29, 1999.

2/ Reported figure.

3/ Not distributed by type and, therefore, not suitable for conversion to volumetric units. Data include all energy and nonenergy products but exclude losses.

TABLE 2
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Metric tons unless otherwise specified)

Commodity	Major operating facilities 1/	Location	Annual capacity e/
Alumina refineries	Achinsk	Achinsk in East Siberia	900,000.
Do.	Bogoslovsk	Urals	1,050,000.
Do.	Boksitogorsk	European north	200,000.
Do.	Nadvoitsy	Nadvoitsy in Karelia	266,000.
Do.	Uralsk	Kamensk region	536,000.
Do.	Volkhov	Volkhov, east of St. Petersburg	45,000.
Aluminum, primary	Smelters:		
Do.	Volkhov	do.	20,000.
Do.	Uralsk	Kamensk	70,000.
Do.	Bogoslovsk	Krasnoturinsk	162,000.
Do.	Novokuznetsk	Novokuznetsk	284,000.
Do.	Kandalaksha	Kola Peninsula	62,500.
Do.	Nadvoitsy	Nadvoitsy in Karelia	68,000.
Do.	Volgograd	Volgograd	168,000.
Do.	Irkutsk	Sherekov, near Irkutsk	262,000.
Do.	Krasnoyarsk	Krasnoyarsk	755,000.
Do.	Bratsk	Bratsk	843,800.
Do.	Sayansk	Sayanogorsk	274,000.
Apatite, concentrate	Khibiny apatit association	Kola Peninsula	15,000,000.
Do.	Kovdor iron ore mining association	do.	700,000.
Asbestos	Kiyembay	Orenburg Oblast	500,000.
Do.	Tuvaasbest	Tuva Republic	250,000.
Do.	Uralasbest	Central Urals	1,100,000.
Bauxite	North-Urals mining company	Severouralsk region	NA.
Do.	South-Urals mining company	South Urals region	NA.
Do.	Severnaya Onega Mine	Northwest region	800,000.
Boron	Bor Association	Maritime region	140,000 (boric acid).
Do.	Amur River complex	Far East	8,000 (boric acid).
Do.	Alga River chemical complex	do.	12,000 (boric acid).
Chromite	Saranov complex	Saranov	200,000.
Coal	Basins:		
Do.	Donets (east)	Rostov Oblast	30,000,000.
Do.	Kansk Achinsk	East Siberia	50,000,000.
Do.	Kuznetsk	West Siberia	160,000,000.
Do.	Moscow	Moscow region	15,000,000.
Do.	Neryungri	Yakut-Sakha Republic	15,000,000.
Do.	Pechora	Komi Republic	30,000,000.
Do.	South Yakutia	Yakut-Sakha Republic	17,000,000.
Cobalt	Norilsk Nickel	Norilsk, Kola Peninsula	4,000.
Do.	Rezh, Ufaleynikel	Southern Urals	4,000
Do.	Yuzhuralnikel enterprises		(total southern Urals).
Do.	Tuva cobalt	Khovu-Aksy in Tuva Republic	NA.
Copper, mining and beneficiation complexes (Cu content of concentrates)	Buribai enterprise	Buribai region	5,000.
Do.	Gai complex	Gai region	40,000.
Do.	Kirovgrad complex	Kirovgrad region	12,000.
Do.	Krasnouralsk complex	Krasnouralsk region	12,000.
Do.	Norilsk complex	Norilsk region	400,000.
Do.	Sredneuralsk complex	Ekatrinenburg region	12,000.
Do.	Uchali complex	Uchali region	40,000.
Do.	Urap complex	Stavropol region	7,000.
Copper, metal (smelting and refining complexes)	Kirovgrad (smelting)	Kirovgrad	150,000.
Do.	Krasnouralsk (smelting)	Krasnouralsk	60,000.
Do.	Kyshtym (refining)	Kyshtym	70000.
Do.	Mednogorsk (smelting)	Mednogorsk	40,000.
Do.	Norilsk (smelting and refining)	Norilsk	500,000.
Do.	Pyshma (refining)	Pyshma	350,000.
Do.	Severonikel (smelting)	Monchegorsk	20,000.
Do.	Sredneuralsk (smelting)	Revda	140,000.

See footnotes at end of table.

TABLE 2--Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Metric tons unless otherwise specified)

Commodity		Major operating facilities	Location	Annual capacity e/
Diamonds	thousand carats	Almazy Rossii-Sakha Association	Aykhmal, Mirnyy, Udachnaya areas of Yakut-Sakha Republic	10,000 gem, 10,000 industrial.
Feldspar		Deposits:		
Do.		Lupikko	Karelia	NA.
Do.		Kheto-Lanbino	do.	NA.
Ferroalloys		Kosaya Gora iron works	Kosaya Gora	200,000.
Do.		Kuznetsk ferroalloy plant	Novokuznetsk	400,000.
Do.		Lipetsk iron and steel works	Lipetsk	NA.
Do.		Serov ferroalloy plant	Serov	NA.
Do.		Tulachermet Scientific and Industrial Association	Tula	NA.
Do.		Chelyabinsk electrometallurgical plant	Chelyabinsk	350,000.
Do.		Chusovoy iron and steel plant	Chusovoy	NA.
Do.		Klyuchevsk ferroalloy plant	Dvurechinsk	160,000.
Fluorspar		Mining and beneficiation complexes:		
Do.		Abagaytuy	trans-Baikal	NA.
Do.		Kalanguy	do.	NA.
Do.		Kyakhtinsky	do.	NA.
Do.		Usugli	do.	NA.
Do.		Yaroslavsky	Far East	NA.
Gold	kilograms	Gold mining regions:		200,000 (total gold).
Do.	do.	Yakut-Sakha	Yakut-Sakha Republic	
Do.	do.	Buryat	Buryat Republic	
Do.	do.	Magadan	Magadan Oblast	
Do.	do.	Krasnoyarsk	Krasnoyarsk region	
Do.	do.	Maritime	Maritime region	
Do.	do.	Tuva	Tuva Republic	
Iron ore		Mining areas:		
Do.		Kursk Magnetic Anomaly (KMA) containing following enterprises:		50,000,000 (total KMA).
Do.		Mikhailovka	Zheleznogorsk	
Do.		Lebedi	Gubkin	
Do.		Stoilo	do.	
Do.		Northwest containing following enterprises:		22,000,000 (total Northwest).
Do.		Olenogorsk	Olenogorsk	
Do.		Kostomuksha	Kostomuksha	
Do.		Kovdor	Kola Peninsula	
Do.		Siberia (east) containing the following mining enterprises:		18,000,000 (total Siberia east and west).
Do.		Korshunovo	Zheleznogorsk	
Do.		Rudnogorsk	Rudnogorsk	
Do.		Siberia (west) including the following mining enterprises:		
Do.		Abakan	Abaza	
Do.		Sheregesh	Sheregesh	
Do.		Tashtagol	Tashtagol	
Do.		Teya	Vershina Tei	
Do.		Urals containing following mining enterprises:		22,000,000 (total Urals).
Do.		Akkermanovka	Novotroitsk	
Do.		Bakal	Bakal	
Do.		Goroblagodat	Kushva	
Do.		Kachkanar	Kachkanar	
Do.		Magnitogorsk	Magnitogorsk	
Do.		Peshchanka	Rudnichny	
Lead-zinc (recoverable metal content of ore)		Mining complexes:		
Do.		Altay mining and beneficiation complex	Altay mountains region, South Siberia	2,000 lead, 1,000 zinc.
Do.		Dalpolymetal mining and beneficiation complex	Maritime region	20,000 lead, 25,000 zinc.
Do.		Nerchinsk polymetallic complex	Chita Oblast	7,000 lead, 12,500 zinc.
Do.		Sadon lead-zinc complex	Severo-Osetiya	5,000 lead, 14,000 zinc.
Do.		Salair mining and beneficiation complex	Kemerovo Oblast	2,000 lead, 10,500 zinc.

See footnotes at end of table.

TABLE 2--Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Metric tons unless otherwise specified)

Commodity	Major operating facilities	Location	Annual capacity e/
Lead, metal	Dalpolymetal lead smelter	Rudnaya in the Maritime District	20,000.
Do.	Elektrozinc lead smelter	Vladikavkaz in North Caucasus	30,000.
Magnesite	Satka deposit	Chelyabinsk Oblast	3,800,000.
Magnesium, metal (for sale)	Avisma plant	Berezniki	22,000.
Do.	Solikamsk plant	Solikamsk	21,500.
Mica	Mining complexes:		
Do.	Aldan	Yakut-Sakha Republic	NA.
Do.	Karel	Karelia	NA.
Do.	Kovdor	Kola Peninsula	NA.
Do.	Mam	Irkutsk complex	NA.
Molybdenum, mining enterprise	Dzhida tungsten-molybdenum mine	West trans-Baikal	NA.
Do.	Sorsk molybdenum mining enterprise	Sorsk region	NA.
Do.	Tymy-Auz tungsten-molybdenum mining enterprise	North Caucasus	NA.
Do.	Shakhtaminskoye molybdenum mining enterprise	Chita Oblast	NA.
Natural gas	billion cubic meters	Regions:	
Do.	do.	Komi Republic	Komi Republic
Do.	do.	Norilsk area	Norilsk area
Do.	do.	North Caucasus	North Caucasus
Do.	do.	Sakhalin	Far East
Do.	do.	Tomsk Oblast	West Siberia
Do.	do.	Tyumen Oblast including:	do.
Do.	do.	Medvezhye field	do.
Do.	do.	Urengoi field	do.
Do.	do.	Vyrngapur field	do.
Do.	do.	Yamburg field	do.
Do.	do.	Urals	Urals
Do.	do.	Volga	Volga region
Do.	do.	Yakut-Sakha	Yakut-Sakha Republic
Nepheline syenite	Apatite complex	Kola Peninsula	1,500,000.
Do.	Kiya-Shaltyr Mine	Goryachegorsk region, East Siberia	NA.
Nickel, mining enterprise (Ni in ore)	Norilsk Nickel Association	Norilsk region and Kola Peninsula	300,000.
Do.	Yuzhuralnikel company	Southern Urals	20,000 total southern
Do.	Ufaleynikel company	do.	Urals).
Nickel, metal (smelting and refining complexes)	Norilsk Nickel (smelting and refining)	Norilsk	160,000 (smelting), 100,000 (refining).
Do.	do.	Pechenga	50,000 (smelting).
Do.	do.	Monchegorsk	50,000 (smelting), 140,000 (refining).
Do.	Rezh, Ufaleynikel, Yuzhuralnikel enterprises	Southern Urals	65,000 (total, nickel products and nickel in ferronickel).
Oil shale	Leningradslanets Association	Slantsy region	5,000,000.
Petroleum	Producing regions:		
Do.	European Russia:		
Do.	Astrakhan	Northern Caspian Sea Basin	700,000.
Do.	Bashkortostan	Urals	28,000,000.
Do.	Checheno-Ingush Republic	Southern Caucasus	4,500,000.
Do.	Dagestan	North Caucasus	700,000.
Do.	Kaliningrad Oblast	Baltic coast	1,800,000.
Do.	Komi Republic	Northwest	15,000,000.
Do.	Krasnodar Kray	North Caucasus	2,000,000.
Do.	Orenburg Oblast	Urals	13,000,000.
Do.	Perm Oblast	do.	12,000,000.
Do.	Samara	Volga region	16,000,000.
Do.	Saratov Oblast	do.	1,500,000.
Do.	Stavropol Kray	North Caucasus	2,000,000.
Do.	Tatarstan	Volga region	40,000,000.
Do.	Udmurt Republic	Urals	9,000,000.
Do.	East Siberia: Tomsk Oblast	Tomsk Oblast	11,000,000.

See footnotes at end of table.

TABLE 2--Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Metric tons unless otherwise specified)

Commodity	Major operating facilities	Location	Annual capacity e/
Petroleum--Continued:			
Do.	West Siberia:		
Do.	Tyumen Oblast:	Tyumen Oblast	300,000,000.
Do.	Kogolym field	do.	34,000,000.
Do.	Krasnoleninskiy field	do.	12,000,000.
Do.	Langepas field	do.	30,000,000.
Do.	Megion field	do.	18,000,000.
Do.	Nizhnevartovsk field	do.	70,000,000.
Do.	Noyabrsk field	do.	37,000,000.
Do.	Purneftegaz field	do.	12,000,000.
Do.	Surgut field	do.	48,000,000.
Do.	Uray field	do.	8,000,000.
Do.	Varegan field	do.	10,000,000.
Do.	Sakhalin Island	Sakhalin Island	2,500,000.
Phosphate rock	Khibiny Apatit Association	Kola Peninsula	20,000,000 (apatite concentrate).
Do.	Kovdor iron ore mining complex	do.	700,000 (apatite concentrate).
Do.	Kingisepp complex	Leningrad Oblast	NA.
Do.	Lopatino, Yegorevsk deposits	Moscow Oblast	NA.
Do.	Polpinskoye deposit	Bryansk Oblast	NA.
Do.	Verkhnekamsk deposit	Urals	NA.
Platinum-group metals:			130 (total metal).
Ore	Norilsk Nickel Association	Norilsk region	
Metals	Krasnoyarsk refinery of Norilsk Nickel Association	Krasnoyarsk	
Potash, K ₂ O	Uralkaliy	Verkhne Kamsk deposit	3,000,000.
Do.	Silvinit	Solikamsk-Berezniki region of Urals	2,000,000.
Silver	Dukat Mine	Magadan Oblast	1,000 (total silver).
Do.	Coproduct and byproduct of gold and nonferrous metals mining		
Soda ash	Achinsk plant	East Siberia	595.
Do.	Berezniki plant	Urals	1,080.
Do.	Pikalevo plant	Leningrad Oblast	200.
Do.	Sterlitamak plant	Sterlitamak	2,135.
Do.	Volkhov plant	Leningrad Oblast	20.
Steel, crude	Amurstal	Komsomolsk na Amur	1,600,000.
Do.	Asha	Asha	450,000.
Do.	Beloretsk	Bashkir Republic	380,000.
Do.	Chelyabinsk	Chelyabinsk	7,000,000.
Do.	Cherepovets	Cherepovets	14,000,000.
Do.	Chusovoy	Chusovoy	570,000.
Do.	Elektrostal	Moscow	314,000.
Do.	Gorky	Nizhniy-Novgorod	78,000.
Do.	Guryevsk	Guryevsk	160,000.
Do.	Karaganda	Karaganda	6,300,000.
Do.	Kuznetsk	Novokuznetsk	4,700,000.
Do.	Lipetsk	Lipetsk	9,900,000.
Do.	Lysva	Lysva	350,000.
Do.	Magnitogorsk	Magnitogorsk	16,200,000.
Do.	Nizhniy Tagil	Nizhniy Tagil	8,000,000.
Do.	Nizhniy Sergi	Nizhniy Sergi	300,000.
Do.	Novosibirsk	Novosibirsk	1,100,000.
Do.	Omutninsk	Omutninsk	210,000.
Do.	Orsko-Khalilovo	Novotroitsk in Orenburg Oblast	4,600,000.
Do.	Oskol Electric Steel	Stary Oskol	1,450,000.
Do.	Petrovsk-Zabaikalskiy	Petrovsk-Zabaikalskiy	426,000.
Do.	Revda	Revda	281,000.
Do.	Salda	Sverdlovsk Oblast	1,900.
Do.	Serov A.K.	Serov	1,000,000.

See footnotes at end of table.

TABLE 2--Continued
 RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Metric tons unless otherwise specified)

Commodity	Major operating facilities	Location	Annual capacity e/
Steel--Continued:			
Do.	Serp i Molot	Moscow	70,000.
Do.	Severskiy	Polevskoy in Sverdlovsk Oblast	825,000.
Do.	Sibelektrostal	Krasnoyarsk	110,000.
Do.	Sulin	Sulin	280,000.
Do.	Taganrog	Taganrog	925,000.
Do.	Tulachermet-Scientific and Industrial Association	Tula	18,400.
Do.	Verkh-Issetkiy	Ekatrinenburg	132,000.
Do.	Volgograd	Volgograd	2,000,000.
Do.	Vyksa	Vyksa	540,000.
Do.	West Siberian	Novokuznetsk	6,900,000.
Do.	Zlatoust	Zlatoust in Chelyabinsk Oblast	1,200,000.
Talc	Deposits:		
Do.	Onotsk	Irkutsk Oblast	NA.
Do.	Kirgiteysk	Krasnoyarsk Kray	NA.
Do.	Miass	Chelyabinsk Oblast	NA.
Do.	Shabrovska	Sverdlovsk Oblast	NA.
Tin, mining and beneficiation complexes	Khingan	Khabarovsk Kray	NA.
Do.	Solnechnyy	do.	NA.
Do.	Iultin	Magadan Oblast	NA.
Do.	Khrustalnyi	Maritime region	NA.
Do.	Deputatskiy	Yakut-Sakha Republic	NA.
Do.	Pevek	Magadan Oblast	NA.
Tin, smelters	Novosibirsk	Novosibirsk	NA.
Do.	Podolsk	Podolsk	NA.
Do.	Ryazan	Ryazan	NA.
Titanium, metal	Berezniki plant	Berezniki	40,000.
Do.	Moscow plant	Moscow	NA.
Do.	Podolsk plant	Podolsk	NA.
Tungsten, mining and beneficiation complexes (W content of concentrates)	Antonovogorsk	East Transbaikal	NA.
Do.	Balkan	Urals, northeast of Magnitogorsk	NA.
Do.	Belukha	East Trans-Baikal	NA.
Do.	Bom-Gorkhom	West Trans-Baikal	NA.
Do.	Dzhida	do.	NA.
Do.	Iultin	Magadan Oblast	NA.
Do.	Lermontov	Maritime region	NA.
Do.	Solnechnyy	Southern Khabarovsk region	NA.
Do.	Tyrmyauz	North Caucasus	NA.
Do.	Primorye	Maritime region	NA.
Tungsten, metal	Nalchik plant	Caucasus	NA.
Uranium, U content	Priargunskiy mining and chemical enterprise	Krasnokamensk	3,000.
Vanadium, ore	Kachkanar iron ore mining complex	Urals	NA.
Vanadium, metallurgical processing facilities	Chusovoy plant	do.	17,000 (total metal).
Do.	Nizhniy Tagil plant	do.	
Zinc (nonassociated with lead), metal content of ore	Bashkir copper-zinc complex	Sibai in southern Urals	5,000.
Do.	Buribai copper-zinc mining complex	Buribai in southern Urals	1,500.
Do.	Gai copper-zinc mining and beneficiation complex	Gai in southern Urals	25,000.
Do.	Kirovgrad copper enterprise	Kirovgrad in central Urals	1,200.
Do.	Sredneuralsk copper complex	Revda in central Urals	5,000.
Do.	Uchali copper-zinc mining and beneficiation complex	Uchali in southern Urals	90,000.
Zinc, metal	Chelyabinsk electrolytic zinc plant	Chelyabinsk	190,000.
Do.	Elektrozink plant	Vladikavkaz in North Caucasus	100,000.

e/ Estimated. NA Not available.

1/ All mines unless otherwise specified.

TABLE 3
SELECT RUSSIAN EXPORTS

(Thousand metric tons)

Commodity	Quantity			
	1995	1996	1997	
Aluminum, primary	2,249.9	2,619.4	2,706.3	
To non-CIS countries	2,253.0	2,617.3	2,702.9	
To CIS countries	4.2	2.2	3.4	
Ammonia	3,257.0	3,263.9	3,240	
To non-CIS countries	3,152.0	3,029.7	3,037	
To CIS countries	105.0	234.2	203	
Coal, hard	303,359.5	26,258.9	22,897.2	
To non-CIS countries	21,242.9	20,866.1	19,537.7	
To CIS countries	1.0	5,392.8	3,359.5	
Coke	1,277.7	1,413.5	1,436.9	
To non-CIS countries	212.5	521.5	575.4	
To CIS countries	1,065.2	892.0	861.5	
Copper, refined	471.2	529.6	534.5	
To non-CIS countries	466.8	527.4	533.6	
To CIS countries	4.4	2.2	0.9	
Ferroalloys	496.9	285.5	342.6	
To non-CIS countries	478.8	274.3	334.1	
To CIS countries	18.1	11.2	8.5	
Iron ore and concentrates	13,833.5	11,256.8	12,625	
To non-CIS countries	11,369.8	7,890.8	NA	
To CIS countries	2,513.7	3,366.0	NA	
Natural gas	million cubic meters	192,193.0	198,514.0	200,858
To non-CIS countries		121,882.0	128,028.0	120,871
To CIS countries		70,311.0	70,486.0	79,987
Nickel		152.8	167.2	221.7
To non-CIS countries		152.5	166.9	221.5
To CIS countries		0.3	0.3	0.2
Petroleum, crude		122,336.1	125,952.8	126,846.8
To non-CIS countries		96,209.1	105,376.7	109,753.1
To CIS countries		26,127.0	20,576.1	17,093.7
Petroleum refinery products		47,075.2	57,006.1	60,592.6
To non-CIS countries		96,209.1	54,875.8	58,392.2
To CIS countries		3,528.3	1,605.8	2,200.4
Pig iron		2,888.2	2,109.4	2,455.1
To non-CIS countries		2,829.5	2,043.3	2,397.4
To CIS countries		58.7	66.1	57.7
Phosphate Rock		1,730	2,237	2,727
Potash, potassium chloride content		2,137.0	1,755.0	2,562
Titanium, rolled	metric tons	NA	18,660	32,370
Zinc, primary	do.	NA	117,490.0	118,750

NA Not available.